

## Abstract



Title of Document: Development of a low-cost EMG device to display electrical activity of skeletal muscle on a smartphone.

Directed By: Prof. Pratik Mutha

Surface electromyography is a technique to detect the changes in the electric potential across sarcolemma. In this study we have designed and developed a customizable electromyograph to detect and display the electrical activity of skeletal muscles on a smartphone. Main goal of this study was to display electromyogram on smartphone to make it cheap and user friendly. This device is best used as an indicator of the timing of muscle activation and deactivation. Difference in timing between individuals can be used as a marker for disease. This device can also be used to estimate the amount of force produced by the muscle. However the mapping of EMG and force produced is most straightforward in a single joint movement whereas in complex multi-joint movement this relationship is highly non-linear.